prospective study validates our findings and provides another tool to fight against this devastating and common cause of blindness.

Reference

- 1 Hu K, Horgan SE, Sivaraj RR, Avgikos K. Intravitreal bevacizumab for macular oedema secondary to branch retinal vein occlusion. *Eye* 2010; **24**: 194.

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Sir, Interpretation of the outer retina with high-resolution optical coherence tomography

Oishi *et al* are to be congratulated for their paper seeking to evaluate the role of optical coherence tomography (OCT) for profiling macular involvement in patients with retinitis pigmentosa.¹ The interpretation of the outer retina with high-resolution OCT (HROCT) can, however, be problematic. Recently published data by Srinivasan *et al*² suggests that Oishi *et al*¹ have erroneously used the external limiting membrane (ELM) as their reference line, rather than the photoreceptor inner/outer segment (IS/OS) junction as claimed. We present three images, that we believe aid the accurate interpretation of the outer retinal signal, and thus facilitate the accurate identification of these structures in future studies.

Figure 1a shows the HROCT image from a prepared RPE specimen of an eye that had been recently enucleated for an iris melanoma. The columnar RPE monolayer can be clearly visualised as can the underlying choriocapillaris/choroid. Figure 1b shows the HROCT image of a healthy volunteers' outer retina/RPE. As in Srinivasan's study,² the outer retinal signal can be clearly seen to comprise of three distinct bands. Figure 1c shows a HROCT image of a patient with a neurosensory detachment secondary to CSR. The outer retinal signal in the parafoveal location is again represented by three dark bands, but as one traverses from the normal retina to the neurosensory detachment, the bottom dark band continues unaffected but the two superficial bands follow the elevated retina. These observations support the interpretation of the outer retinal signal as described earlier; namely, when three lines are present the bottom represents RPE, the line immediately above this is the cone outer segment tips, and the uppermost line is the IS/OS.² Thus the reference plane used by Oishi *et al* must be the ELM and not the IS/OS.¹ This observation does not, however, invalidate their conclusions. Photoreceptor loss would be associated with a loss of the outer retinal signal and in such cases

Figure 1 (a) (top panel) High-resolution OCT of a histological RPE specimen. (Vitreous gel and overlying retina removed). The choriocapillaris can be visualised as small lacunae immediately below the RPE monolayer. (b) (middle panel). High-resolution OCT findings of a normal 30-year-old human patient (orientated horizontally with the optic nerve head position beyond the right of the image). The outer retinal/RPE signal can be clearly seen to be represented by three distinct high signal bands. The uppermost solid arrow identifies the IS/OS junction, the bottom solid arrow identifies the RPE monolayer with the underlying larger choroidal vessels just visible. The dashed arrow identifies the ELM, and not the IS/OS junction as identified by Oishi *et al*. (c) (bottom panel). High-resolution OCT findings in a patient with acute onset CSR. In the parafoveal location the image generated by the outer retinal/RPE shows three distinct bands. The two superficial bands (the junction of the inner and outer photoreceptor segments and the cone outer segment tips) follow the contour of the elevated retina, whereas the outer RPE band (solid arrow) continues unchanged.

the signal from the ELM and RPE would then be difficult to distinguish apart. In effect attenuation of the ELM signal is probably an accurate, albeit surrogate marker for photoreceptor atrophy.

References

- 1 Oishi A, Nakamura H, Tatsumi I, Sasahara M, Kojima H, Kurimoto M *et al*. Optical coherence tomographic pattern and focal electroretinogram in patients with retinitis pigmentosa. *Eye* 2009; **23**: 299–303.

- 2 Srinivasan VJ, Monson BK, Wojtkowski M, Bilonick RA, Gorczynska I, Chen R *et al*. Characterization of outer retinal morphology with high speed, ultrahigh-resolution optical coherence tomography. *Invest Ophthalmol Vis Sci* 2008; **49**: 1571–1579.

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Sir, Reply to Squirrell *et al*

We greatly appreciate Squirrell *et al* for their kind comments and beautiful images. As they mentioned, the arrow in our figure can be read as pointing to the line of ELM.

We should apologize for the incomplete explanation and presentation of the figure. We have detected at least four lines at the outer segment of the fovea. The figure provided shows the higher-magnified image of the figure (Figure 1—type 3 in the paper).¹ We have interpreted the uppermost line as ELM (dashed arrow), the second line as IS/OS (upper arrow), and the fourth line as RPE (lower arrow). The line between IS/OS and RPE may be the tips of the cone's outer segments (short arrow). As in many cases, the uppermost line (ELM) was faint and difficult to detect in some cases; we have defined the IS/OS line as the first or second detectable line that has similar intensity as the RPE line. This might be the same as the IS/OS line described earlier; namely, when three lines are present the uppermost line is the IS/OS.² Thus, the arrow provided in Figure 1 in the article indicates an IS/OS line, but not ELM, and the measurement was performed for the IS/OS line. We should have been more careful in making the figure and we have to apologize for the figure leading to misunderstanding.

Figure 1 A stratus OCT image of a RP patient was analysed in the paper. The uppermost line indicates ELM (dashed arrow), the second line IS/OS (upper arrow), and the fourth line RPE (lower arrow). The line between IS/OS and RPE may be the tips of the cone's outer segments (short arrow). ELM lines are sometimes faint in stratus OCT images.

References

- 1 Oishi A, Nakamura H, Tatsumi I, Sasahara M, Kojima H, Kurimoto M *et al*. Optical coherence tomographic pattern and focal electroretinogram in patients with retinitis pigmentosa. *Eye* 2009; **23**(2): 299–303.
- 2 Srinivasan VJ, Monson BK, Wojtkowski M, Bilonick RA, Gorczynska I, Chen R *et al*. Characterization of outer retinal morphology with high-speed, ultrahigh-resolution optical coherence tomography. *Invest Ophthalmol Vis Sci* 2008; **49**(4): 1571–1579.

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Sir, The use of Medpor-coated tear drainage tube in conjunctivodacryocystorhinostomy

I appreciated the analysis, by Fan *et al*,¹ of lacrimal surgery outcomes using the relatively new Medpor-coated Jones tube. My experience is much more limited than their 26 cases; nevertheless, I have noted a high likelihood of exuberant conjunctival overgrowth ('granulation tissue') arising from the caruncle and plica remnants, presumably a reaction to the Medpor material.

In the paper by Fan *et al*,¹ Table 2 cites conjunctival overgrowth severe enough to cause tube obstruction in 23% of cases. I was very enthusiastic about this Jones tube modification, which seemed to promise the elimination of tube extrusion; however, I am now less keen to implant further Medpor-coated Jones tubes.

With reference to the Discussion section of the paper, I recently removed one Medpor-coated tube that had failed due to recurrent conjunctival overgrowth. This was facilitated by passing a no. 11 blade tip down the tract and slitting the Medpor sheath by cutting down onto the tube—allowing the tube to slide out easily, leaving behind a Medpor tract that could then be snipped out with scissors.

Reference

- 1 Fan X, Bi X, Fu Y, Zhou H. The use of Medpor coated tear drainage tube in conjunctivodacryocystorhinostomy. *Eye* 2008; **22**: 1148–1153.

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